WHY CONSUMERS PURCHASE MUSCADINE GRAPES AT DIRECT MARKETS:

2001 Consumer Survey
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Number 30

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Introduction

Although the muscadine grape industry is relatively small throughout the Southeastern United States, there is potential for commercial growth. First, consumer's interest in healthier diets and changing lifestyles has led to increased consumption for fresh fruits. Fresh Trends 2000, published by The Packer, reported that of the customers who are eating more produce, 75 percent of the respondents are eating fresh fruit of which 23 percent are eating more grapes.

Furthermore, in 1997 researchers with USDA's Agricultural Research Service (ARS) and Mississippi State University (MSU), predicted that muscadine grapes will not only be an alternative crop for growers in the Southeast, but a new health food as well (Magee, 1997). ARS horticulturist James B. Magee and MSU nutritionist Betty J. Ector reported finding significant amounts of resveratrol in the skin, pulp, and seeds of these grapes. Resveratrol is the compound in French red and white wines that scientists believe is an agent for lowering cholesterol levels and the risk of coronary heart disease. Furthermore, in the January 1997 issue of Science, researchers at the University of Illinois at Chicago also stated that resveratrol could inhibit tumor promotion (Jang, et al., 1997). Muscadine grapes also contain ellagic acid, which is a natural organic compound thought to inhibit the start of cancer caused by chemicals. Finally, research at the University of Florida suggests that there is a greater potential for health benefits from red muscadine wine than from any other red grapes (Percival, et al, 2002).

Production and marketing of muscadine grapes and wines also has the potential of increasing jobs throughout the local community. Dr. Lanny Bateman, an economist at MSU, estimated that 1,000 acres of muscadine grapes could create 56 to 62 additional jobs in related business, or more than half a million dollars in income from the farm investments alone (Magee, 1997). Currently, the incomes of many of the muscadine growers depend largely on consumer demand for locally produced grapes in nearby metropolitan areas. Marketing is a key factor in the success of horticultural enterprises that sell produce directly to the final consumers. Dr. Bateman pointed out that while muscadine grapes can potentially appeal to a wide range of customers, previous production has been limited primarily to home use. In fact, most muscadine grape growers are small farmers with an average planting of 7.4 acres of grapes and the lack of markets and marketing information has and will continue to be the primary limiting factor to expanding their production. Marketing research will be the key to increasing demand and developing new markets for this industry. However few direct market growers have the resources necessary to conduct extensive consumer surveys to discover information that will help improve their marketing efforts.

Therefore, a consumer survey was conducted during the 2001 fall marketing season to collect data that would document various characteristics of direct marketing customers and provide information about their buying behavior. The overall goal was to provide retail muscadine grape growers with information that will help them identify their market segments and assist them to better market their fruit. This goal was accomplished by concentrating on the following objectives:

1. Determine the key factors that influence consumer decisions to purchase fresh muscadine grapes.
2. Determine the effectiveness of alternative advertising and promotional programs in influencing customers to purchase grapes from grower operated direct market outlets.
3. Determine consumer satisfaction with the fruit and services currently offered at the grower operated direct market outlets.
4. Determine if consumers are aware of the potential health benefits associated with the consumption of muscadine grapes.
5. Recommend specific changes that will assist direct market managers improve their marketing, advertising, and promotional programs.

Methodology

The North Carolina Grape Council, the North Carolina Department of Agriculture and Consumer Service, and the Department of Agricultural and Resource Economics at N.C. State University cooperated to conduct a customer survey at six direct market muscadine grape operations throughout the state during the fall of 2001. These operations represented typical direct market operations in North Carolina. Four of these operations offered the customers two options for buying grapes, they could either pick their own grapes from the grower's vineyard or they could buy pre-picked grapes at the grower's fruit stand. The other two businesses did not operate a fruit stand. A survey team visited each location three consecutive days, Friday, Saturday, and Sunday, during the outlet's busiest marketing period and randomly selected customers at each location to participate in the survey.

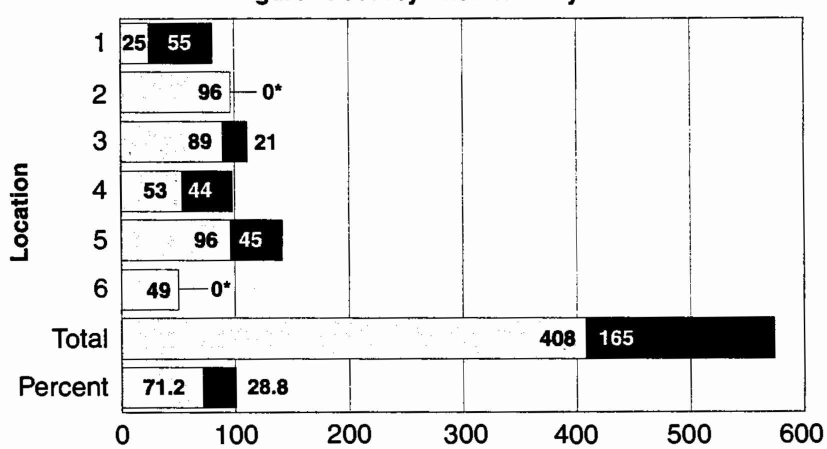
The survey was divided into two segments. The first segment was administered when the customer arrived at the direct market operation. This part focused on their purchase expectations, their previous experience of picking muscadine grapes, if they planned to pick their own fruit or buy pre-picked fruit, and the effect advertising had on their decision to visit the operation where they were interviewed. The second part was conducted as the customers left the operation and concentrated on their actual purchases, how the fruit was to be used, the quality of the fruit and services received at the direct market outlet, and the socioeconomic characteristics needed to identify the various market segments. Although some respondents did not answer every question, a total of 573 usable questionnaires were collected.

Results and Discussion

Customer Profiles

Overall, slightly more than 71 percent of the consumers interviewed in this survey picked their own grapes, while 28.8 percent bought pre-picked fruit **(Figure 1)**. However, for the four locations that had both pick-your-own (PYO) and pre-picked operations, 61.4 percent picked their own grapes and 38.6 percent purchased pre-picked grapes. The largest percent of surveyed customers who bought pre-picked fruit was 68.8 percent at Location #1.

Figure 1. Survey Interviews by Location



* The grower did not operate a fruit stand at this location.

Most of the customers were middle age, with lower to middle incomes, and on average traveled longer distances to the farm than the mileage's recorded in previous consumer surveys (Safley, et al., (1994), Safley, et al. (2002)). The most common PYO customer was between 25 and 44 years old, had an annual household income between $15,000 to $29,999, and at least one family member worked 40 or more hours per week **(Table 1)**. The second largest age group was 45 to 54 years old and the second most frequent income category was between $30,000 and $44,999 per year, however a significant number of customers earned $45,000 to $59,999. The average age for all of the PYO respondents was 49.6 years old and slightly over 20 percent were retirees. Since almost 90 percent of these customers traveled less than 49.9 miles, it appears that that the primary market area for PYO operations was within a 50 mile radius of the farm. Therefore, excluding those who drove over 50 miles, the average number of miles customers traveled to the operation

Table 1. Selected Demographic and Residential Information for Surveyed Customers Compared to the North Carolina Population

	All Customers	PYO Customers	Pre-Pick Customers
	Percent	Percent	Percent
Age:			
Less than 18	3.0	3.6	1.6
18-24	2.8	2.7	3.1
25-44	39.6	40.5	37.5
45-54	31.5	30.6	33.6
55-64	23.1	22.6	24.2
Average Age	50.5	49.6	52.1
Household Income:			
Less than $15,000	8.7	7.8	10.8
$15,000 - $29,999	33.1	31.4	37.2
$30,000 - $44,999	23.2	23.3	23.0
$45,000 - $59,999	17.4	17.9	16.2
$60,000 - $74,999	10.3	11.5	7.4
$75,000 or more	7.3	8.1	5.4
Adults Working 40 or More Hours Per Week:			
None	23.9	20.3	32.7
1	40.0	44.5	29.0
2	32.1	31.4	34.0
3 -4	3.6	3.5	3.7
More than 4	0.4	0.3	0.6
Miles Traveled			
0 to 4.9 miles	17.9	16.1	22.4
5 to 9.9 miles	18.1	17.8	18.8
10 to 19.9 miles	21.4	20.0	24.8
20 to 49.9 miles	33.6	35.9	27.9
50 miles or more	9.0	10.2	6.1
Average Miles Traveled			
Including customers traveling 50 miles or more	23.9	26.6	17.2
Excluding customers traveling 50 miles or more	15.5	16.4	13.7

was 16.4 miles, with 35.9 percent driving between 20 and 49.9 miles and 20 percent driving between 10 and 19.9 miles.

The greatest percentage of customers who bought grapes at the grower's fruit stand was also between 25 and 44 years old, had an annual household income of $15,000 to $29,999, and two family members worked 40 or more hours per week. The second largest age group was 45 to 54 years old and the second most frequent income category was between $30,000 and $44,999 per year. The average age was 52.1 years old and over 32 percent of the customers were retirees. Again excluding those who traveled over 50 miles, the average mileage pre-pick customers traveled to the fruit stand was 13.7 miles, with almost 28 percent driving between 20 and 49.9 miles and 24.8 percent driving between 10 and 19 miles.

Male and female couples made up the largest population of shoppers followed by shopping parties composed of males shopping alone and females shopping alone **(Table 2)**. It is interesting to note that only 135 of the 570 respondents who answered this question, or 23.7 percent, of the shopping parties were accompanied by children, and of those, 114 of the parties picked their own fruit.

Table 2. Composition of the Shopping Party

Members in the Shopping Party	All Customers	PYO Customers	Pre-Pick Customers
Adult female	84	44	40
Adult Male	88	58	30
Adult female and male	161	115	46
Adult female with one or more children	45	38	7
Two or more adult females	61	49	12
Adult female and male with children	60	53	7
Two or more adult males	41	25	16
Two or more adult females with children	22	17	5
Adult male with children	8	6	2

This was the first visit to the direct market outlet for slightly more than 28 percent of the respondents while almost 72 percent were repeat customers, having either picked and/or purchased muscadine grapes at the same farm previously **(Table 3)**. PYO operations had the highest percentage of new customers, 30 percent, and the pre-pick fruit stands had the largest percentage of repeat customers, 76.4 percent. Of the repeat customers, 41 percent of the PYO customers had picked grapes earlier in the season at the same operation compared to 28.3 percent of the pre-pick buyers who had purchased grapes at the same fruit stand. Most of the interviewed consumers had neither picked nor bought grapes at another direct market operation earlier in the year.

Table 3. Picking History of the Interviewed Grape Customers

	All Customers	PYO Customers	Pre-Pick Customers
	Percent	Percent	Percent
Is this your first visit to this farm?			
Yes (New Customers)	28.2	30.0	23.6
No (Repeat Customers)	71.8	70.0	76.4
Did you buy or pick grapes on this farm earlier this year?			
Yes (at least the 2nd visit this season)	37.2	41.0	28.3
No (1st visit this season)	62.8	59.0	71.7
Have you visited any other direct market operation this year to buy or pick grapes?			
Yes	5.0	5.6	3.7
No	95.0	94.4	96.3

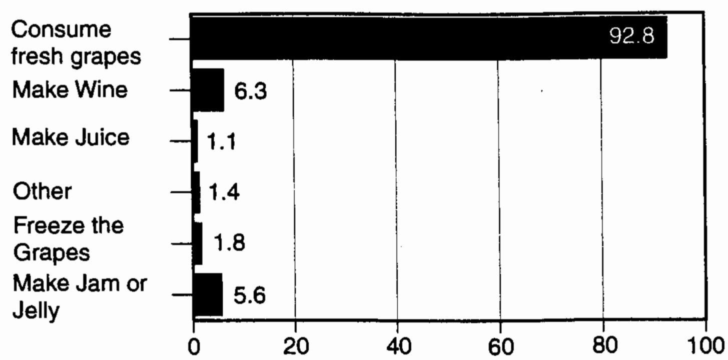
Purchase Patterns

The vast majority of the customers planned to consume the grapes fresh while making wine was the second most popular use and processing the fruit for jam or jelly was the third most prevalent use **(Table 4)**. A larger percentage of the pre-pick customers intended to either make wine than the PYO customers, 10.9 percent compared to 4.4 percent, or make jam or jelly, 6.1 percent compared to 5.4 percent. Only 1.8 percent of all the customers planned to freeze the grapes and 1.1 intended to make fruit juice.

Table 4. Intended Use of Grapes

Intended Use	All Customers	PYO Customers	Pre-Pick Customers
	Percent*	Percent*	Percent*
Consume fresh grapes	92.8	94.1	89.7
Make wine	6.3	4.4	10.9
Make jam or jelly	5.6	5.4	6.1
Freeze the grapes	1.8	2.5	0.0
Make Juice	1.1	0.7	1.8
Other	1.4	1.5	1.2
Number Responses	621	440	181

Figure 2
Intended Use of Grapes*
(All Customers)



(* Respondents could select more than one use)

Upon arriving at the farm, customers were asked how much fruit they expected to pick or buy during their visit. During the exit interview, they were also asked how much fruit they actually bought to determine any differences. Overall PYO customers picked more grapes than expected while pre-pick customers purchased less **(Table 5)**. PYO customers anticipated picking an average of 11.4 pounds but actually picked an average of 12.4 pounds, for a net increase of a pound. Pre-pick customers, on the other hand, expected to buy an average of 15.7 pounds and actually purchased an average of 15.0 pounds for a net decrease of 0.7 pounds.

Table 5. Amount of Grapes Customers Anticipated Buying Compared to the Amount Actually Purchased

Volume	Anticipated Purchases	Actual Purchases	Difference
	Average Pounds	Average Pounds	Average Pounds
PYO Customers	11.4 lbs.	12.4 lbs.	+1.0 lbs.
Pre-Pick Customers	15.7 lbs.	15.0 lbs.	- 0.7 lbs.
All Customers	12.7 lbs.	13.3 lbs.	+ 0.6 lbs.

Upon arriving at the PYO operation, almost 55 percent of the customers expected to pick between 1 to 5 pounds of grapes while 22.5 percent anticipated picking between 6 and 10 pounds and 11.3 percent between 11 to 15 pounds **(Table 6)**. However, exit interviews revealed that the actual percentage of consumers who picked between 1 and 5 pounds of grapes decreased to 29.4 percent while the percentage that picked 6 to 10 pounds increased to 31.6 percent and those who picked between 11 and 15 pounds increased to 16.9 percent. Approximately 58 percent of the pre-pick customers expected to buy between 1 to 5 pounds and about 19 percent anticipated purchasing between 6 to 10 pounds and

Table 6. Volume of Grapes PYO Customers Expected to Purchase Compared to Actual Purchases

Volume	Percentage of Customers who Expected to Buy this Volume	Percentage of Customers who Actually Bought this Volume
1 to 5 pounds	54.9	29.4
6 to 10 pounds	22.5	31.6
11 to 15 pounds	11.3	16.9
16 to 20 pounds	4.9	7.6
Over 20 pounds	6.4	14.5
Average pounds	11.4	12.4

12.1 percent over 20 pounds **(Table 7)**. Exit surveys showed that only 46.7 of these customers actually bought between 1 to 5 pounds, 23 percent purchased 6 to 10 pounds and almost 16 percent bought over 20 pounds of fruit.

Table 7. Volume of Grapes Pre-Pick Customers Expected to Purchase Compared to Actual Purchases

Volume	Percentage of Customers who Expected to Buy this Volume	Percentage of Customers who Actually Bought this Volume
1 to 5 pounds	58.2	46.7
6 to 10 pounds	18.8	23.0
11 to 15 pounds	8.5	12.1
16 to 20 pounds	2.4	2.4
Over 20 pounds	12.1	15.8
Average pounds	15.7	15.0

When asked to rank how important six factors were relative to their decisions to purchase muscadine grapes, taste was the most important factor for both sets of customers while freshness was ranked second, price was rated third, and health benefits were ranked fourth by PYO consumers **(Table 8)**. Pre-picked customers rated both freshness and health benefits equally as second in importance and both price and fruit size equally at fourth. In contrast, the customers who were interviewed at direct market strawberry outlets in a previous consumer survey ranked price last in importance when presented the same list of factors (Safley, et al. 2002). It is interesting to note that the household income of 41.8 percent of the respondents in the muscadine grape study was less than $30,000 compared to 24.6 percent of the customers interviewed at the strawberry operations.

Since most customers planned to consume the grapes fresh, it was not surprising that good fruit quality was the major reason customers said that they decided to pick more grapes than they had anticipated **(Figure 3)**. Consumers who discovered that the fruit was easier to pick than they had anticipated ranked "ease of picking" as having the second largest positive impact. "Picked over vines" or "not enough fruit", on the other hand, was the primary reason customers picked less fruit than expected, while "hot weather" had the second largest negative impact on their picking decisions **(Figure 4)**.

Table 8. Most Important Factor in Consumer Purchase Decisions			
Factor	**All Customers**	**PYO Customers**	**Pre-Pick Customers**
Taste	1	1	1
Freshness	2	2	2
Price	3	3	4
Health Benefits	4	4	2
Fruit Color	5	5	6
Fruit Size	6	6	4
Firmness	7	7	7
Note: *Customers were asked to rank each factor on a scale of 1 to 7, with 1 being the most important and 7 being the least important*			

Figure 3: Reasons Customers Picked More Grapes than Expected

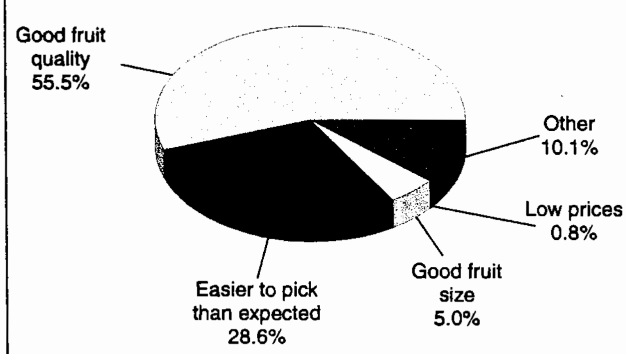
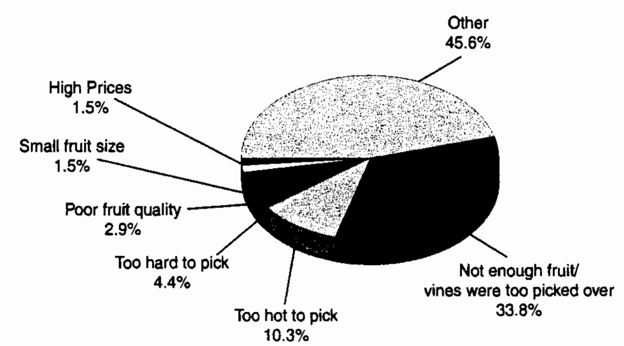


Figure 4: Reasons Customers Picked Fewer Grapes than Expected



There was relatively little variation between the six cooperating growers in the prices they charged for their PYO muscadine grapes, but there was significant difference in the prices they charged at their fruit stands **(Table 9)**. PYO prices were either $0.90 or $1.00 per pound and averaged $0.967 per pound for the six operations while pre-picked prices ranged from $1.00 to $1.25 per pound and averaged $1.125 per pound. The smallest price gap between the two types of direct market outlets was $0.10 per pound at Location #1 where the owner charged $0.90 per pound for PYO grapes and $1.00 per pound for pre-picked fruit. Conversely, the largest price gap was $0.25 per pound at Location #5 where the PYO price was $1.00 per pound and the pre-picked price was $1.25 per pound. On average, the price differential between the PYO and pre-picked fruit was $0.175 per pound for the four farms that offered both types of direct market venues.

Table 9. Muscadine Grape Prices by Location, by the Type of Direct Market Outlet			
Location	**PYO Operations ($/lb)**	**Pre-Pick Operations ($/lb)**	**Difference ($/lb)**
1	$0.90	$1.00	$0.10
2	$0.90	$1.05	$0.15
3	$1.00	N/A	N/A
4	$1.00	$1.20	$0.20
5	$1.00	$1.25	$0.25
6	$1.00	N/A	N/A
Average	$0.967	$1.125	$0.175

Overall, the average amount of money consumers spent for muscadine grapes was $13.40, with PYO customers spending an average of $12.30 and pre-pick customers spending an average of $17.00 **(Table 10)**. However these averages include four pre-pick customers who each purchased over 100 pounds of fruit. Excluding these individuals, the overall average amount consumers spent was $11.60 and pre-pick customers spent an average of $11.50.

Table 10. Amounts Customers Spent for Grapes			
Amount Spent	**All** Customers	**PYO** Customers	**Pre-Pick** Customers
$0 - $10	65.2	63.3	67.4
$11 - $20	20.4	22.5	16.0
$21 - $30	6.3	7.7	3.1
$31 - $50	5.1	4.5	7.4
Over $50	3.0	2.0	6.1
Averages:			
All Customers	$13.40	$12.30	$17.00
Excluding customers who bought more than 100 lbs.	$11.60	$12.30	$11.50

Obviously there was no change in the average amount PYO customers spent. Over 63 percent of the PYO customers spent between $1 and $10, 22.5 percent spent between $11 and $20, and 14.2 percent spent over $21. In contrast, over 67 percent of the pre-pick customers spent between $1 and $10 while 16.0 percent spent between $11 and $20, and 16.6 percent spent over $21.

The average consumer expenditures compared to household incomes, the age of the respondent, and the number of working adults in the household are presented in **Tables 11 through 13**. Average expenditures for the PYO customers generally increased as household incomes increased. These outlays rose from $9.10 for

Table 11. Average Customer Expenditures Compared to Household Incomes						
Household Income	**All Customers**	**PYO Customers**	**Pre-Pick Customers**	**All Customers**	**PYO Customers**	**Pre-Pick Customers**
	Includes customers who bought more than 100 lbs.			Excludes customers who bought more than 100 lbs.		
Less than $15,000	$13.90	$9.10	$22.80	$8.20	$9.10	$7.70
$15,000 - $29,999	$13.30	$12.20	$16.10	$11.80	$12.20	$11.60
$30,000 - $44,999	$10.90	$11.60	$9.60	$10.90	$11.60	$9.60
$45,000 - $59,000	$15.20	$13.70	$24.30	$13.00	$13.70	$17.20
$60,000 - $74,999	$13.60	$14.50	$11.50	$13.60	$14.50	$11.50
$75,000 or More	$16.10	$9.20	$39.60	$9.70	$9.20	$13.30

Table 12. Average Customer Expenditures Compared to Customer Age						
Customer Age	**All Customers**	**PYO Customers**	**Pre-Pick Customers**	**All Customers**	**PYO Customers**	**Pre-Pick Customers**
	Includes customers who bought more than 100 lbs.			Excludes customers who bought more than 100 lbs.		
18 - 24 Years	$9.70	$9.10	$11.80	$9.70	$9.10	$11.80
25 - 44 Years	$12.20	$12.00	$12.50	$12.20	$12.00	$12.50
45 - 54 Years	$17.20	$14.60	$27.10	$14.20	$14.60	$16.30
55 - 64 Years	$14.50	$12.00	$21.10	$12.30	$12.00	$12.90
65 Years or Older	$13.10	$10.70	$18.10	$10.70	$10.70	$10.80

Table 13. Average Customer Expenditures Compared to the Number of Hours Adults in the Household Work						
Hours Worked by the Adults in the Household	**All Customers**	**PYO Customers**	**Pre-Pick Customers**	**All Customers**	**PYO Customers**	**Pre-Pick Customers**
	Includes customers who bought more than 100 lbs.			Excludes customers who bought more than 100 lbs.		
Worked 40 or More Hours per Week:						
1 Adult	$9.30	$9.50	$8.00	$9.30	$9.50	$8.00
2 Adults	$11.60	$10.70	$15.30	$11.60	$10.70	$15.30
Worked Less Than 40 or MoreHours per Week:						
1 Adult	$15.30	$9.10	$25.60	$10.80	$9.10	$13.80
2 Adults	$15.90	$20.30	$12.20	$15.90	$20.30	$12.20
Retired						
1 Adult	$16.10	$14.40	$24.40	$13.60	$14.40	$13.10
2 Adults	$15.00	$12.40	$20.20	$12.60	$12.40	$13.00

consumers with household incomes of less than $15,000 to $14.50 for those with incomes between $60,000 to $74,999 before dropping to $9.20 for customers with incomes equal to or greater than $75,000. The other decrease in expenditures was in the $30,000 to $44,999 category where PYO consumers spent an average of $11.60. In contrast average expenditures for customers buying pre-picked fruit were more variable. Excluding the four patrons who bought over 100 pounds of grapes, customers with incomes between $45,000 to $59,999 had the largest average outlay at $17.20, while those earning over $75,000 had the second highest average expense at $13.30. Pickers who had a household income from $15,000 to $29,999 accounted for the third largest expenditure at $11.60, which was slightly higher than the $11.50 spent by consumers who had incomes between $60,000 and $74,999.

Sorting the data by age revealed that PYO customers between 45 and 54 years old had the highest average expenditure of $14.60 per consumer. Those between 25 and 44 as well as 55 and 64 years of age accounted the second largest outlay of $12.00 per consumer whereas patrons 65 or older spent $10.70 per consumer. Again excluding the individuals who bought over 100 pounds of grapes, pre-pick customers between the ages of 45 and 54 accounted for the highest purchases, $16.30 per consumer, followed by those between the ages of 55 and 64 who spent an average of $12.90 per consumer. Not surprisingly, customers who were 65 years or older had the lowest average expenditures of all the age groups, spending $10.80 at the fruit stands.

PYO purchases were typically higher when both partners either semi-retired or retired. Households where both adults worked less than 40 hours per week accounted for the largest average expenditures at $20.30 per customer. However, if only one family member worked less than 40 hours per week the amount dropped to $9.10 per customer which was the lowest average expenditure. Retirees accounted for the second and third largest PYO outlays, $14.40 per customer if there was one retiree in the home and $12.40 if both partners were retired. If only both family members were employed full time the average expenditure was $10.70 per customer, but if only one family member worked 40 or more hours per week, average expenditures were $9.50 per customer.

Again excluding the customers who bought more than 100 pounds of grapes, households where both adults worked more than 40 hours per week accounted for the largest average expenditure at the fruit stand, $15.30 per customer. However if only one member was fully employed the amount decreased to $8.00 per customer, which was the lowest outlay. If one member of the household was semi-retired, the average expenditure was $13.80 per customer but decreased to $12.20 per customer if both partners worked less than 40 hours per week. There was relatively little variation for the retirees with total expenditures averaging $13.10 per customer if one partner was retired and $13.00 if both were retired.

Table 14. Amount of Time Customers Stayed at the Grape Operation		
Minutes Spent	PYO Customers	Pre-Pick Customers
	Percent	Percent
Less than 15	5.7	84.9
15 - 30	29.8	9.7
31 - 45	26.6	2.4
46 - 60	17.7	1.8
More than 60	20.2	1.2

Less than 6 percent of the PYO customers stayed less than 15 minutes and almost 30 percent took between 15 to 30 minutes to pick the amount of fruit they wanted. Over 26 percent of the pickers needed between 31 and 45 minutes to pick their grapes and almost 38 percent stayed longer than 45 minutes. In contrast, nearly 85 percent of the customers who purchased pre-pick grapes at the growers' fruit stands completed their transactions within 15 minutes while 9.7 percent of the patrons took between 15 to 30 minutes to make their purchases **(Table 14)**. Only 5.4 percent of the customers who visited the fruit stand stayed longer than 30 minutes, however previous studies indicate that these customers may not have been at the fruit stand longer than an hour. They may have started picking grapes at the PYO operation, grew tired of picking and finished buying the volume of grapes they wanted at the fruit stand where they completed the second part of the interview. Therefore the times recorded for their visit were longer than the times recorded for those who initially intended to buy grapes at the fruit stand.

Table 15. Average Customer Expenditures Compared to the Amount of Time Customers Spent at the Grape Operation						
Minutes Spent at the Operations	All Customers	PYO Customers	Pre-Pick Customers	All Customers	PYO Customers	Pre-Pick Customers
	Includes customers who bought more than 100 lbs.			Excludes customers who bought more than 100 lbs.		
Less Than 15	$16.10	$4.70	$18.30	$9.71	$4.70	$10.70
15 - 30	$8.80	$7.30	$22.50	$8.80	$7.30	$22.50
31 - 45	$9.80	$9.80	$8.70	$9.80	$9.80	$8.70
46 - 60	$14.00	$13.70	$20.80	$14.00	$13.70	$20.80
More Than 60	$23.90	$23.60	$53.80	$23.90	$23.60	$53.80

Not surprisingly the PYO customers who picked longer spent more money **(Table 15)**. The average amount PYO customers spent gradually increased from an average of $4.70 for those who stayed less than 15 minutes to $23.60 for those individuals who stayed longer than an hour. Pre-pick customers, who finished their purchases within 15 minutes, spent an average of $10.70 while those who stayed between 15 and 30 minutes spent an average of $22.50 and customers who stayed between 46 and 60 minutes spent $20.80. Although the individuals who were recorded as remaining at the fruit stand longer than 60 minutes only accounted for 1.2 percent of the shoppers they spent the most money, $53.80 per customer.

Advertising Effectiveness and Factors Influencing Selection of the Direct Market Outlet

When asked what prompted their visit to the direct market outlet where they were interviewed, 37.1 percent of the respondents said that advertising influenced their shopping decision while 62.9 percent indicated that their decision was not influenced by any type of advertisement **(Table 16)**. Over 42 percent of the PYO consumers said that an advertisement influenced them to visit the farm and about 57 percent were not swayed by an ad. In contrast, only 24.2 percent of the pre-pick buyers were visiting the fruit stand because of an advertisement, while 75.8 percent of the buyers said that advertising did not influence on their decision. However advertising did have a significant impact on pre-pick customers who were visiting the fruit stand for the first time relative to repeat customers. Almost 55 percent of these first-time customers indicated that an ad did have an impact on their decision to stop at the outlet.

Table 16. First-Time Customers Compared to Repeat Customers			
Did you visit the farm because of an advertisement	**All Customers**	**PYO Customers**	**Pre-Pick Customers**
All Customers	Percent	Percent	Percent
Yes	37.1	42.4	24.2
No	62.9	57.6	75.8
First Time Customers			
Yes	51.6	41.0	54.9
No	48.4	59.0	45.1
Repeat Customers			
Yes	19.1	37.0	31.5
No	80.9	63.0	68.5

Customers whose visit was not motivated by advertising were presented a list of possible reasons for selecting a direct marketing outlet and asked to select the primary reason that influenced their decision to stop at the operation. With almost 38 percent of the PYO customers indicating that a family member or friend told them about the operation, "personal referrals" was easily the most prevalent reason consumers gave for deciding where to pick muscadine grapes **(Table 17)**. Convenient location was chosen by 18.9 percent of the PYO customers and was the second most important reason while customers who were interested in a "farm experience" was third with 15.4 percent. Fruit quality and customers who just happened to be driving and decided to stop tied as the fifth most important reason with 9.0 percent each. Pre-pick customers also selected personal referrals as the most important factor, which tied with fruit quality for the number one reason for selecting a specific fruit stand. Convenient location was third, chosen by 19.5 percent of the consumers, and patrons wanting a farm experience was fourth, picked by 12.2 percent. Customers who just happened to be driving and decided to stop was the fifth most important reason, accounting for 8.9 percent of the respondents. Only 2.5 percent of the pre-pick customers indicated that they decided to visit the fruit stand based on the variety or selection of muscadine grapes.

Table 17. Reasons Customers came to the Grape Operation Whose Visit was not Prompted by an Advertisement			
Reason	**All Customers**	**PYO Customers**	**Pre-Pick Customers**
	Percent	Percent	Percent
Referred by someone	33.4	37.8	25.2
Location/Convenience	19.1	18.9	19.5
Quality of grapes	14.6	9.0	25.2
Farm Experience	14.3	15.4	12.2
Drove by and decided to stop	9.0	9.0	8.9
Family outing	2.5	3.9	0.0
Variety/selection of grapes	2.0	1.7	2.5
Purchase a large volume of grapes	0.6	0.9	0.0
Low grape prices	0.3	0.0	0.8
Exercise	0.3	0.4	0.0
Other	3.9	3.0	5.7

First-time PYO customers, who were not persuaded by an advertisement, said that a personal referral was the primary reason that influenced their decision about where to pick grapes and the impulse to stop when they happened to drive by and saw the vineyard was second most frequent motivation **(Table 18)**. Referrals were the most significant factor that influenced repeat PYO customers' decision to return to the same operation, while convenient location was second and the desire to have a "farm experience" was third. Personal referrals were also the major reason that influenced pre-pick customers to visit the fruit stands for the first time **(Table 19)**. Almost 48 percent of these consumers listed this factor as the main reason for selecting a fruit stand. In addition, 17.4 percent of the first-time customers just happened to drive by the fruit stand and decided to stop while 13 percent selected the fruit stand based on the quality of the grapes and another 13 percent select the business

Table 18. Primary Reasons First-Time Customers Decided to Shop at the Grape Operation Compared to Repeat Customers, PYO Customers*

Reason for Shopping	First-time Customers		Repeat Customers	
	Rank	(Percent)	Rank	(Percent)
Referred by someone	1	55.4	1	32.6
Drove by and decided to stop	2	12.5	5	7.9
Location/Convenience	3	10.7	2	21.3
Family Outing	4	7.1	6	2.8
Farm Experience	6	5.4	3	18.5
Purchase a large volume of grapes	7	1.8	9	0.6
Quality of grapes	–	0.0	4	11.8
Variety/selection of grapes	–	0.0	7	2.2
Exercise	–	0.0	9	0.6
Low grape prices	–	0.0	–	0.0
Other	4	7.1	8	1.7

** This question was only asked to those customers who indicated they were not prompted to visit the location by an advertisement.*

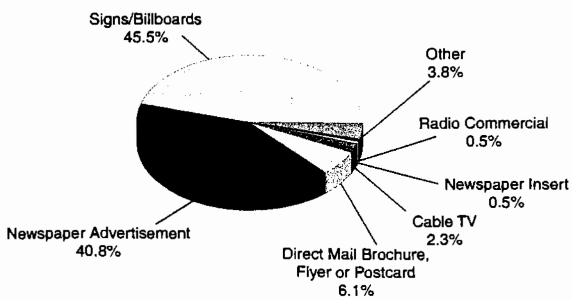
Table 19. Primary Reasons First-Time Customers Decided to Shop at the Grape Operation Compared to Repeat Customers, Pre-Pick Customers*

Reason for Shopping	First-time Customers		Repeat Customers	
	Rank	(Percent)	Rank	(Percent)
Referred by someone	1	47.9	3	20.0
Drove by and decided to stop	2	17.4	5	7.0
Quality of grapes	3	13.0	1	28.0
Location/Convenience	3	13.0	2	21.0
Farm Experience	–	0.0	4	15.0
Variety/selection of grapes	–	0.0	7	3.0
Low grape prices	–	0.0	8	1.0
Purchase a large volume of grapes	–	0.0	–	0.0
Family outing	–	0.0	–	0.0
Exercise	–	0.0	–	0.0
Other	5	8.7	6	5.0

** This question was only asked to those customers who indicated they were not prompted to visit the location by an advertisement.*

Table 20. Customer Response Rate by Type of Advertisement		
Type of Advertisement	**Number of Customers Who Responded to an Advertisement**	**Percent of Customers Who Responded to an Advertisement**
Signs/Billboards	97	45.5
Newspaper Advertisement	87	40.8
Direct Mail Brochure, Flyer or Postcard	13	6.1
Cable TV	5	2.3
Newspaper Insert	1	0.5
Radio Commercial	1	0.5
Internet	1	0.5
Association or NCDA&CS PYO Directory	0	0.0
Commercial TV	0	0.0
Yellow Pages	0	0.0
Other	8	3.8

Figure 6: Customer Response Rate by Type of Advertisement
Percent



based of its convenient location. Most repeat customers, however, based their selection primarily on the quality of the grapes sold at the fruit stand with 28 percent of the respondents choosing this response. The second most listed factor for repeat business at fruit stands was convenient location, given by 21 percent of the patrons, which was followed closely by personal referrals with 20 percent. An additional 15 percent of these consumers indicated that they wanted a "farm experience" while only 7 percent happen to drive by and decided to stop.

Of the 213 customers who were swayed by a specific advertisement, 97, or 45.5 percent of the respondents, said that the ad for the direct market outlet was posted on either a sign or billboard **(Table 20)**. Newspaper advertisements had the second largest impact with a 40.8 percent response rate while direct mailers were a distant third with 6.1 percent and cable TV was fourth with 2.3 percent. Newspaper inserts, radio commercials, or Internet advertisements were each selected by only one person. Yellow page advertisements, commercial TV ads, or the PYO directory published by the NCDA&CS were not mentioned by any of the consumers.

Table 21. Information in the Advertisement that Attracted Customers to the Grape Operation			
Information in the Advertisement	**All Customers**	**PYO Customers**	**Pre-Pick Customers**
	Percent	Percent	Percent
Fresh Grapes	75.1	74.1	79.5
Farm Location	19.0	19.3	18.0
Grape Prices/Sale	1.5	1.2	2.5
Coupons	1.0	1.2	0.0
Hours of Operation	0.5	0.6	0.0
Other	2.9	3.6	0.0

When asked what information in the advertisement attracted them to the direct market operation, over 75 percent of the customers who responded to an ad said that the phrase "fresh grapes" influenced their decision and 19 percent said that information about the farm location affected their decision **(Table 21)**. Information about

Table 22. Customers Ability to Recall any of the Grape Operations Advertisements that were Run During the Previous Thirty Days

Customer Recall of Any Advertisements	All	PYO	Pre-Pick
		Percent	
Yes	33.7	37.1	27.4
No	66.3	62.9	72.6
Types of Advertisements the Customers Recalled		Number of Responses	
Newspaper Advertisement	64	45	19
Signs/Billboards	38	27	11
Direct Mail Brochure, Flyer or Postcard	8	8	0
Radio Commercial	6	3	3
Newspaper Insert	1	1	0
Yellow Pages	1	1	0
Cable TV	1	0	0
Association or NCDA&CS PYO Directory	0	0	0
Commercial TV	0	0	0
Internet	0	0	0
Other	5	2	3

Table 23. Types of Radio Stations Most Frequently Listened to by Grape Customers

Type of Radio Station	All Customers	PYO Customers	Pre-Pick Customers
	Percent	Percent	Percent
Religious	27.9	31.3	19.5
Oldies & Soft Rock	21.3	19.6	25.6
Country	14.6	12.9	18.9
None	5.3	3.5	9.8
Classical	4.9	5.9	2.4
Contemporary	4.6	5.4	2.4
Talk Radio	4.4	4.0	5.5
Public (NPR)	4.1	4.2	3.7
Classic Rock	3.2	4.0	1.2
Other types of stations	9.7	9.2	11.0

grape prices persuaded 1.5 percent of the respondents to visit a direct market outlet and redeemable coupons influenced 1.0 percent of the customers.

Customers who were not influenced by an ad were asked if they could remember seeing any advertisement within the last month promoting the direct market outlet where they were buying grapes. Only 37.1 percent of the PYO customers could recall at least one type of advertisement while 62.9 percent could not remember a specific ad **(Table 22)**. Slightly more than half, 45 of 87, of the individuals who could recall an ad remembered a newspaper advertisement, while 27 respondents remembered an ad that was posted on a sign or billboard and direct mailers were a distant third. Even fewer of the pre-pick consumers could remember an advertisement. Only 27.4 percent recalled a specific ad and 72.6 percent could not. Of the 37 pre-pick customers who could think of an ad, 19 recalled a newspaper ad and 11 remembered seeing a roadside sign or billboard promoting the fruit stand.

Since direct market operators could use radio advertisements to promote their business, another objective of this survey was to determine the types of radio stations listened to by their customers. Overall, the three most popular types of radio stations were religious, oldies or soft rock, and country stations, which were listened to by 27.9, 21.3, and 14.6 percent, respectively, of the surveyed customers **(Table 23)**. More PYO customers reported listening to religious stations, 31.3 percent, while the majority of the pre-pick patrons listened to oldies and soft rock radio stations.

Table 24. Amounts Spent by PYO Customers Whose Visit was Prompted by an Advertisement Compared to Customers Whose Visit was not Prompted by an Advertisement		
Amount Spent	**Advertisement Prompted Customer's Visit**	**Advertisement Did Not Prompt Customer's Visit**
	Percent	Percent
$0 - $10	64.3	62.6
$11 - $20	23.4	21.9
$21 - $30	8.2	7.3
$31 - $50	2.9	5.6
Over $50	1.2	2.6
Average Amount	$11.00	$13.20

Table 25. Amounts Spent by Pre-Pick Customers Whose Visit was Prompted by an Advertisement Compared to Customers Whose Visit was not Prompted by an Advertisement		
Amount Spent	**Advertisement Prompted Customer's Visit**	**Advertisement Did Not Prompt Customer's Visit**
	Percent	Percent
$0 - $10	58.6	66.4
$11 - $20	6.9	21.8
$21 - $30	3.5	3.6
$31 - $50	20.7	5.5
Over $50	10.3	2.7
Average Amounts:		
All Customers	$33.70	$15.40
Excluding customers who bought more than 100 lbs.	$18.80	$11.70

On average, PYO consumers who responded to an ad spent $2.20 less per customer with a larger percentage spending more than $10.00 or less compared to those who were not influenced by an advertisement **(Table 24)**. Exit interviews also revealed that 31 percent of the pre-pick customers who responded to an ad spent over $30.00 compared to 8.2 percent of the customers who did not react to an ad **(Table 25)**. Excluding the four individuals who bought more than 100 pounds of grapes, on average these consumers spent $7.10 more than those who were not swayed by advertisements. Including these four individuals, there was a difference of $18.30 per customers.

PYO Picking Instructions

PYO customers were asked specific questions about picking instructions that the operators did or did not provide them when they arrived at the direct market outlet. Almost 28 percents of the customers said that they were given instructions on how to pick muscadine grapes and slightly more than 72 percent were not. Of those who received picking instructions, 99 percent indicated that this information was helpful while 95.4 percent of the individuals who were not given picking instructions felt that this information would have been beneficial. Seventy percent of the customers received directions on where to go in the vineyard to pick grapes and 98 percent of these people believed that these instructions were helpful and informative. However, of the 30 percent who were not given directions on where to pick, only 14 percent felt that this information would have been helpful while 86 percent did not believe that these directions would have been beneficial.

Peak Traffic Days

Although determining the peak consumer traffic periods was not an objective of this study, the total number of completed surveys per day is directly related to the volume of customer traffic and gives some insight into the busiest days of operation. For PYO operations, Saturday was easily the busiest day of the week with 65.7 percent of the total respondents compared to 19.6 percent on Sunday and 14.7 percent on Friday **(Table 26)**. Saturday was also the peak day for pre-pick operations with 48.5 percent of the respondents shopping on this day. However, Friday was the second most popular with almost 31 percent of the customers interviewed on this day and Sunday was third with 20.6 percent of the consumers shopping on this day **(Table 27)**.

Table 26. Day the PYO Customers Completed the Survey

Location	Friday	Saturday	Sunday	Total
#1	12	13	0	25
#2	0	96	0	96
#3	13	53	23	89
#4	20	25	8	53
#5	13	58	25	96
#6	2	23	24	49
Total	**60**	**268**	**80**	**408**
Percent	**14.7**	**65.7**	**19.6**	**100.0**

Table 27. Day the Pre-Pick Customers Completed the Survey

Location	Friday	Saturday	Sunday	Total
#1	22	33	0	55
#2	0	0	0	0
#3	4	15	2	21
#4	10	16	18	44
#5	15	16	14	45
#6	0	0	0	0
Total	**51**	**80**	**34**	**165**
Percent	**30.9**	**48.5**	**20.6**	**100.0**

Summary and Recommendations

This study identified consumer demographic characteristics, attributes customers look for when selecting PYO and pre-pick direct market muscadine grape outlets, average expenditures per customer, typical driving distances to the direct market operations, how long it takes customers to either pick or buy pre-picked grapes, and the effectiveness of advertising. On average, PYO customers tended to be younger, have slightly higher family incomes and a large percentage reported that only one family member worked 40 or more hours per week. In contrast pre-pick consumers tended to be older, have lower incomes and a larger percentage of the respondents were retired.

While the average expenditures at PYO operations were smaller if the customer was 65 years old or older, further examination indicates that retirees or semi-retirees should not be ignored as PYO customers. Average PYO expenditures were actually larger if the customers were retired or both the husband and wife worked less than 40 hours per week. Similar to previous consumer surveys (Safley and Wohlgenant (1994) and Safley, et al (2002)), females seem to play a major role in purchase decisions since they were a part of over 75 percent of the shopping parties interviewed in this study, visiting the direct market either by themselves or with a friend or family member.

A significant percentage of the customers lived within ten miles of the farm, however customers who traveled between 20 to 50 miles to reach the farm comprised the largest percentage of respondents surveyed at both direct market operations. The initial site selected for the direct market operation can have a long-term effect on the success, or failure, of the business. Therefore, to increase the probability of success, growers should locate new PYO operations and fruit stands as close to population centers that closely resemble the demographic characteristics of consumers identified in this study whenever possible. Managers should also monitor the demographic changes within their current market areas so they can adjust their operations to meet their customers' changing requirements.

A referral from either friends or family members was easily the major factor that influenced consumers' decisions to initially patronize a direct market outlet. Since "word-of-mouth" or personal referrals are so important in attracting new consumers, direct market operators who satisfy their customer's expectations in terms of fruit quality, fruit size, and service have a comparative advantage in attracting new consumers. It is much easier to retain current customers than to prospect for new ones (Barton, 1999). Businesses that understand the lifetime value of a customer place significant emphasis on excellent service. Good customer service is also critical to garnering repeat business and building customer loyalty (Barton, et al, 2002). Satisfied customers give positive referrals if they are pleased with the product and service. Given that about 71 percent of the patrons are repeat customers, growers could incorporate these individuals into their marketing strategy by actively encouraging their regular customers to tell their friends about the operation. For example, growers could provide brochures about their direct market operation for their repeat customers to give to their friends or they could give discount incentives for bringing in new customers.

Results of this study also indicate that impulse buying was the second most important reason that impacted first-time customers' decision to select a direct market operation. That is, customers happened to be driving by a fruit stand, found the operation attractive, and decided to stop. Convenient location was the third most cited reason for first time patrons selecting a specific direct market. The high percentage of impulse buyers reinforces the importance for direct market operators to select a convenient location for their business and to use good signage to attract customers businesses. It also supports the notion that managers should be sensitive to how their operation is viewed by the public and develop an attractive layout. Other research has shown that neat, clean direct market operations with ample parking, safe entries and exits off of and onto the highway and attractive fruit displays help persuade customers to stop at these business.

Customers, whose shopping trip was prompted by an advertisement, said that the phrase "fresh grapes" or the information about the location of the farm in the advertisement attracted them to the direct market operation. Consequently, managers should highlight this information in their advertisements and ensure that this information is easily visible in their print media. Emphasizing the availability of fresh pre-picked muscadine grapes may be beneficial because some potential customers may not realize that local grape producers also operate a fruit stand.

It is also interesting to note that pre-pick customers ranked "health benefits" as the second most important factor that could influence their decisions purchase muscadine grapes. Given this finding efforts to promote the health benefits associated with eating muscadine grapes should be increased to help strengthen the consumer demand.

Since a promotional program that could reach a large number of consumers in the southeast region would probably be costly, this could be an opportunity for the departments of agriculture and grape growers' associations in these states to develop cooperative advertisement campaign to promote the health benefits of muscadine grapes.

Assuming that managers in medium or large market areas want to use radio advertisements, they will probably have to select from a number of different stations. In this study, the customers listed religious, oldies and soft rock, and country music stations as the three types of radio stations that they listened most often. In addition, 57 percent of the PYO customers and 63 percent of the pre-pick customers said that they regularly subscribed to the local newspaper. While there is no guarantee that any form of advertisement will be effective, previous consumer studies have found that retail managers who repeatedly focused their media ads on a simple, specific message, such as convenient location and freshness, recorded the highest response rates.

PYO customers who stayed longer than 45 minutes spent significantly more money than the pickers that stayed less than 45 minutes. This result does not mean that every customer should be encouraged to stay longer in hopes that they will spend more money. However, it does suggest that managers should be prepared to accommodate consumers who need extra time to pick the volume of grapes that they want to purchase. The increased amount of time some customers spend at the fruit stand also offers growers the opportunity to increase their income by selling grape products and related items or other fruits and vegetables, baked goods, etc. that the customers might buy.

PYO operations and fruit stands offer growers a chance to sell their produce directly to the public and can provide an opportunity for producers to receive higher net returns for their crops. Direct marketer managers who can target their potential customers, know why consumers buy their produce and can attract customers to their operations are better prepared to provide the goods and services necessary to be financially successful. It was the purpose of this publication to provide managers with the additional information on consumer buying behavior and the factors that influence their purchases of muscadine grapes to help them make more informed marketing, advertising and promotional decisions.

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